REMARKS

1. 35 U.S.C. 112.

Applicant has replaced the term "such a nature" by the term "such a material". Applicant is of the opinion that this is sufficient for overcoming the Examiner's unclarity objection. Additionally, applicant has slightly reworded Claim 1 so that is becomes clear that the "to be patterned layer" becomes the "patterned layer" after the patterning step. Similar amendments have been made to independent method Claims 1 and 13.

2. Allowable Subject Matter.

The Examiner has indicated Claims 1 to 8 as allowable if rewritten to overcome the 35 U.S.C. 112 objection. It appears that the Examiner forgot to state that Claim 13 is also allowable, since the Examiner mentions Claim 13 in the last line of page 4 of the subject Official Communication.

3. 35 U.S. C. 102

Claims 9 to 12 have been deleted.

Claim 14 has been amended to overcome the prior art objections raised in the subject Office Action. In particular, applicant has amended Claim 14 so that it recites a semiconductor on insulator (SOI) structure having a semiconductor layer and an insulator layer. Please note that this amendment is for example supported by the third paragraph of page 4.

Please also note that the semiconductor from the SOI structure corresponds to the "patterned layer" in formerly pending Claim 14, and that the insulator layer of the SOI structure corresponds to the "intermediate layer" of formerly pending Claim 14.

Additionally, please note that applicant has stated in the first paragraph of amended Claim 14 that the active height of the fluid structure is determined by the thickness of the semiconductor layer. This amendment is supported by lines 3 and 4 of the first paragraph of page 4 of the specification.

Additionally, please note that applicant has stated in the first paragraph of the amended Claim 14 that the active height of the fluid structure is determined by the thickness of the semiconductor layer. This amendment is supported by lines 3 and 4 of the first paragraph of page 4 of the specification.

Additionally, please note that applicant has further defined in amended Claim 14 that the intermediate layer does not contribute to the active height of the fluid structure. Please note that this feature is an immediate consequence of the fact that the active height of the fluid structure is determined by the thickness of the semiconductor layer. Additionally, please refer to page 4, third paragraph, where it is outlined that the intermediate layer is not impaired by the patterning of the patterned layer, which in the case of etching, means that the intermediate layer is an etch stop. This means that the intermediate layer does not have any contribution to the active height because it does not contribute to the fluid structure in the semiconductor layer.

To this end, please also refer to the first paragraph of page 5 and the penultimate paragraph of page 5 or the last line of page 6, where it is outlined that the height of the active pattern is determined by the thickness of the patterned layer alone, which means that the transparent intermediate layer does not contribute to the active height.

In the following, applicant discusses U.S. Patent No. 6,251343 B1 (document D1).

Please refer to Fig. 2F of this document, which the Examiner also refers to on page 4 of the Office Action and on page 3 of the Office Action.

Layer 112 in Fig. 2F corresponds, in the Examiner's point of view, to the second transparent wafer.

Layer 102 corresponds to the intermediate layer.

Layer 200 corresponds to the patterned layer.

Please note that Fig. 2F does not show a first wafer as defined in Claim 1, because there is no layer on top of layer 200 in document D1. The Examiner, however, refers to column 12, line 56 of document D1, where it is outlined that the "cover layer 200" may include other components, including, *e.g.* integrated optical elements, *e.g.* lenses, gratings, coatings, polished detection windows, etc.

In the following, applicant discusses why Claim 14 is new in view of document D1.

Document D1 does not disclose the use of a semiconductor on insulator structure in a fluid device. Although this reference mentions some material for the body 100 and the cover 200, no SOI structure is mentioned in this reference.

Additionally, document D1 does not disclose that the semiconductor layer (which would correspond to layer 200 according to the Examiner's point of view) has a fluid structure patterned therein, the fluid structure having an active height which is determined by the thickness of the semiconductor layer. Although channels 206 extend through layer 200 in this reference, the active height of this feature is not determined by height of layer 200 but is determined by the combined height of layer 200 and 102. Additionally, please further note that in document D1, also layer 110 has, on its upper surface, groves and/or wells 114. Please see Fig. 1 and column 3, lines 26 to 29. This means that the active height of the fluid structure in document D1 is not determined by the thickness of layer 200 but is determined by the combined thickness of layers 200 and 102, and is also determined by a portion of the thickness of layer 110.

Additionally, document D1 does not disclose that the distinct combination of a semiconductor material or the semiconductor layer and an insulator material for the intermediate layer has to be used for the fluid device. Document D1 simply discloses several materials for layer 200 and several materials for layer 102, but does not disclose the specific use of an insulator material for layer 102 and a semiconductor material for layer 200.

Additionally, please note that, in accordance with Claim 14, the intermediate layer does not contribute to the active height of the fluid structure. This is in clear contract to document D1, where the openings 106 in layer 102, which the Examiner regards as the "intermediate layer" (now corresponding to the insulator layer) probably extend through this layer. In accordance with Claim 14, the intermediate layer does not have any fluidic features, since it works as an etch stop.

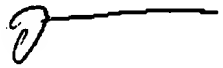
Please note that this would be in complete contradiction to document D1, because the whole device in document D1 would be nonsense, when the openings 106 in Fig. 2F of document D1 would not be present. In this case, there would not be any connection from opening 206 to the wells/groves in layer 112, which would render such a device completely useless.

Finally, amended Claim 1 definitely requires a first transparent wafer on a second surface of the patterned layer. Please note that an integrated optical elements, *i.e.* a lens or a grating, as the Examiner states on page 3 of the subject Official Communication, is not a waver on a second surface, but can be regarded as a structure integrated in layer 200, which the Examiner compares to the semiconductor layer (formerly the patterned layer).

The Examiner's attention is drawn to the fact that a wafer on a layer is completely different to a feature integrated in a layer.

4. Should the Examiner deem it helpful, he is encouraged to contact applicant's attorney, Michael A. Glenn, at (650) 474-8400.

Respectfully submitted,



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AMENDMENTS TO THE CLAIMS

1. (currently amended)A method of producing a fluid device with a fluid structure having an active height, said method comprising the following steps:

providing a basic wafer comprising a supporting substrate, an intermediate layer on the supporting substrate and a to be patterned layer on the supporting substrate, the thickness of the to be patterned layer determining the active height of the fluid structure, said intermediate layer being of such a ~~nature~~ material that it is essentially not impaired by a patterning step to pattern ~~of~~ the to be patterned layer;

patterning the to be patterned layer so as to obtain a patterned layer and to produce the fluid structure of the fluid device, the fluid structure extending from a first surface of the patterned layer to the intermediate layer;

attaching a first transparent wafer so that the fluid structure is covered;

removing the supporting substrate and the Intermediate layer so that the fluid structure is exposed at a second surface of the patterned layer; and

attaching a second transparent wafer so that the fluid structure is covered.

2. (original) A method according to claim 1, wherein the basic wafer is an SOI structure comprising a supporting wafer of silicon, an insulating layer of oxide as an intermediate layer and a silicon layer as a patterned layer on the oxide layer.

3. (original) A method according to claim 2, wherein the patterning step is carried out by means of dry etching silicon, the oxide layer acting as an etch stop.

4. (original) A method according to claim 1, wherein the first transparent wafer is a glass wafer which is attached to the patterned layer by means of anodic bonding.

5. (original) A method according to claim 1, wherein the fluid structure is passivated by means of an oxide layer prior to the step of attaching the first transparent wafer.

6. (original) A method according to claim 1, wherein the second transparent wafer is a glass wafer which is attached to the second surface of the patterned layer by means of anodic banding.

7. (original) A method according to claim 1, wherein, in the step of removing the supporting substrate and the intermediate layer, the supporting substrate is

removed by etching, the intermediate layer acting as an etch stop, whereupon the etching method is changed so that the intermediate layer is etched and the patterned layer acts as an etch stop.

8. (currently amended) A method according to claim 1, wherein the fluid device is a capillary path, the providing step including the step of selecting a basic wafer whose patterned layer has a height of such a ~~nature~~ material that a fluid to be transported in the fluid structure is transportable by capillary forces.

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (currently amended) A method of producing a fluid device with a fluid structure having an active height, said method comprising the steps of:

providing a basic wafer comprising a supporting substrate, an intermediate layer on the supporting substrate and a to be patterned layer on the intermediate layer, the intermediate layer being transparent and of such a ~~nature~~ material that it is essentially not impaired by a patterning step to pattern the ~~of the~~ to be patterned layer, and the thickness of the to be patterned layer determining the active height of the fluid structure,

patterning the to be patterned layer so as to obtain a patterned layer and to produce the fluid structure of the fluid component) the fluid structure extending from a first surface of the patterned layer to the intermediate layer;

attaching a first transparent wafer so that the fluid structure is covered;

removing the supporting substrate so that the transparent intermediate layer is exposed; and

attaching a second transparent wafer to the intermediate layer.

14. (currently amended) A fluid device comprising:

a semiconductor on insulator (SOI) structure having a semiconductor layer and an insulator layer, the semiconductor layer ~~a patterned layer with~~ having a fluid structure patterned therein, said fluid structure having an active height which ~~corresponds to~~ is determined by the thickness of the ~~patterned~~ semiconductor layer, and the insulator layer being transparent and formed;

~~a first transparent wafer on a first surface of the patterned layer;~~

~~a transparent intermediate layer~~ on ~~the other~~ a first surface of the patterned layer, the intermediate layer not contributing to the active height of the fluid structure; ~~and~~

a first transparent wafer on a second surface of said patterned layer; and

a second transparent wafer on said transparent intermediate layer.

15. (withdrawn) An analysis apparatus comprising:

a fluid device comprising:

a patterned layer with a fluid structure, said fluid structure having an active height which corresponds to the thickness of the patterned layer;

a first transparent wafer on a first surface of the patterned layer; and

a second transparent wafer on a second surface of the patterned layer or, alternatively, on a transparent intermediate layer arranged between the second wafer and the second surface of the patterned layer;

a sample fluid being arranged in said fluid component;

a light source for transmitting light onto the first transparent wafer of the fluid component;

a light detector for detecting light that emerges from the second transparent wafer of the fluid components; and

a sample fluid analyzer for determining a property of the sample fluid making use of the light emitted by the light source and detected by the light detector.